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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,392	01/28/2004	Gerald Elson	GP- 302896	3326

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Kathryn A. Marra
300 Renaissance Center
Mail Code 482-C23-B21
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER	
BOTTORFF, CHRISTOPHER	

ART UNIT	PAPER NUMBER
3618	

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,392	ELSON ET AL.	
	Examiner	Art Unit	
	Christopher Bottorff	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-26* is/are pending in the application.

4a) Of the above claim(s) *4-8 and 17-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 9-16, and 22-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed March 29, 2006 has been entered. Claim 2 is canceled. Claims 1 and 3-26 are pending. 4-8 and 17-21 are withdrawn as being directed to non-elected species. Claims 1, 3, 9-16, and 22-26 have been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 11-16, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowkes et al. US 4,339,015 in view of Riemer et al. US 5,662,184.

Fowkes et al. disclose, in a motor vehicle of the type having a frame assembly 14, 17, a set of wheels 16 rotatably supported on the frame assembly and a power train 22, 25, 26, 29, 31, 32, 33 operable to drive at least one of the set of wheels. See Figure 2. A fluid storage volume is defined in an elongated rail portion of the frame assembly. See Figure 2 and column 2, lines 42-46. The fluid storage volume is in fluid communication with the power train to provide an operational fluid, in the form of fuel, to the power train. See column 2, lines 42-46.

The frame assembly is rectangular at portion 17 and comprises a plurality of elongated rail portions, including two longitudinal frame rails along the sides of the vehicle and two cross frame rails that are each at the front and rear of the vehicle

respectively. See Figure 2. The fluid storage volume is defined within at least two of the plurality of elongated rail portions, particularly the two longitudinal frame rails. See Figure 2. Also, the power train includes a motor 31 that is electrically connected to an internal combustion engine 26 to convert electrical energy into rotary movement of a shaft coupled to the set of wheels. See column 2, lines 36-41 and 50-57.

The vehicle of Fowkes et al. utilizes a an internal combustion engine system provided with fuel directly from the fluid storage volume, rather than a fuel cell system that converts hydrogen-containing fuel and an oxidant into electrical energy.

However, Riemer et al. teach the desirability of generating electrical energy to power a motor through the use of a fuel cell system, and not an internal combustion engine system. See Figures 1a and 1b and column 2, lines 4-11. The fuel cell system of Reimer et al. comprises a fuel cell 15 operable to convert a hydrogen containing fuel and an oxidant into electrical energy; a radiator 33 in fluid communication with the fuel cell for cooling the fuel cell via a cooling fluid; and a methanol fuel tank 17 in fluid communication with the fuel cell via a reforming system to provide a primary source of the hydrogen-containing fuel to the fuel cell. See column 2, lines 12-27.

From the teachings of Reimer et al., generating electricity in the vehicle of Fowkes et al. with a fuel cell system rather than an internal combustion engine system would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help to reduce emissions that are harmful to the environment. The vehicle resulting from this modification would have a methanol fuel tank supported on the frame assembly and in fluid communication with the power train such that the fluid

storage volume is a reserve tank. The hydrogen resulting from the reforming process, serving as the operational fluid, may be stored in the reserve tank until needed. Also, since the space within the frame rails is substantially less than the space within the methanol fuel tanks, the fluid storage volume is substantially less than the fuel tank volume.

Claims 9, 10, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fowkes et al. US 4,339,015 in view of Riemer et al. US 5,662,184 as applied to claims 1 and 14 above, and further in view of Finamore US 6,969,545.

Fowkes et al., as modified by Riemer et al., do not disclose that the fluid storage volume has a liner or that the fluid storage volume is filled with a hydrogen storage media. However, Finamore teaches the desirability of providing a fluid storage volume adapted to contain hydrogen with a liner 20 and a hydrogen storage media 30. See Figure 1; column 1, lines 58-61; and column 2, lines 24-31. From the teachings of Finamore, providing the fluid storage volume or Fowkes et al., as modified by Reimer et al., with a liner would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help to protect the shell of the fluid storage volume and help facilitate heat transfer. From the further teachings of Fowkes et al., filling the fluid storage volume or Fowkes et al., as modified by Reimer et al., with a hydrogen storage media would have been obvious to one of ordinary skill in the art at the time the invention was made. This would aid in storing the hydrogen produced by the methanol reforming process until the hydrogen is needed by the fuel cell.

Response to Arguments

Applicants' arguments filed March 29, 2006 have been fully considered but they are not persuasive.

Applicants assert that Fowkes et al. do not teach or suggest the desirability of the modification. Applicants further assert that modifying Fowkes et al. to include a fuel cell is improper as it would allegedly render Fowkes unsatisfactory for its intended purpose and it would allegedly change the principle of operation of Fowkes et al. impermissibly.

However, Riemer et al. provide the teaching of the modification. The lack of such a teaching in Fowkes et al. does not undermine the desirability taught by Reimer et al. Also, Applicants fail to explain why replacing the internal combustion engine system of Fowkes et al. with a fuel cell system would render Fowkes unsatisfactory for its intended purpose or impermissibly change the principle of operation. As Applicants note, the object of Fowkes is to provide "a motor vehicle with a battery pack and a charging unit in convenient form which will provide a practical range of use of the vehicle" (see at least Column 1, Lines 40-43). Replacing the internal combustion engine system with a fuel cell system would not undermine the ability of the battery charging system to provide for a practical range of use. The batteries and generator would not be disturbed. Only the source of power for the generator would change, which would be immaterial to achieving the purpose and principle of operation of Fowkes et al.

In regard to Finamore, Applicant again fails to explain why the modification cited by the examiner could not properly be combined with Fowkes, as modified by Riemer et

al. The teachings of Finamore suggest the combination. Furthermore, the provision in the fluid storage volume of Fowkes et al. of a liner and a hydrogen storage media would not disturb the objective of the charging system and would follow consistently with the use of a fuel cell system.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (571) 272-6692. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Bottorff

CHRISTOPHER P. ELLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600